Presentation
To The

Midwest Maritime Security Conference

By
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US Army Corps of Engineers®

Rock Island District

- Primarily a civil works district
- 78,000 square miles
- Portions of 5 states
- Operate 582 miles of 9-foot navigation channel
- 20 locks & dams
- 2nd longest navigation channel of any Corps district
- 2nd largest number of locks of any Corps district
- 3 reservoirs

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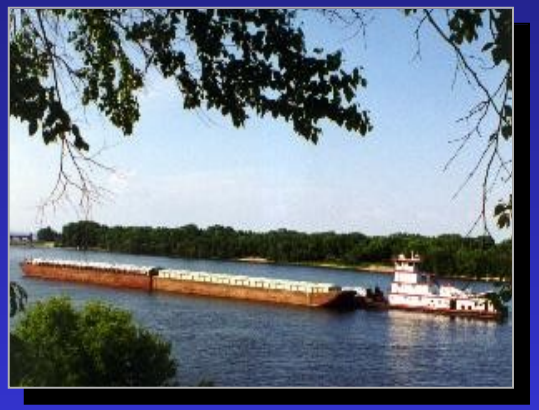
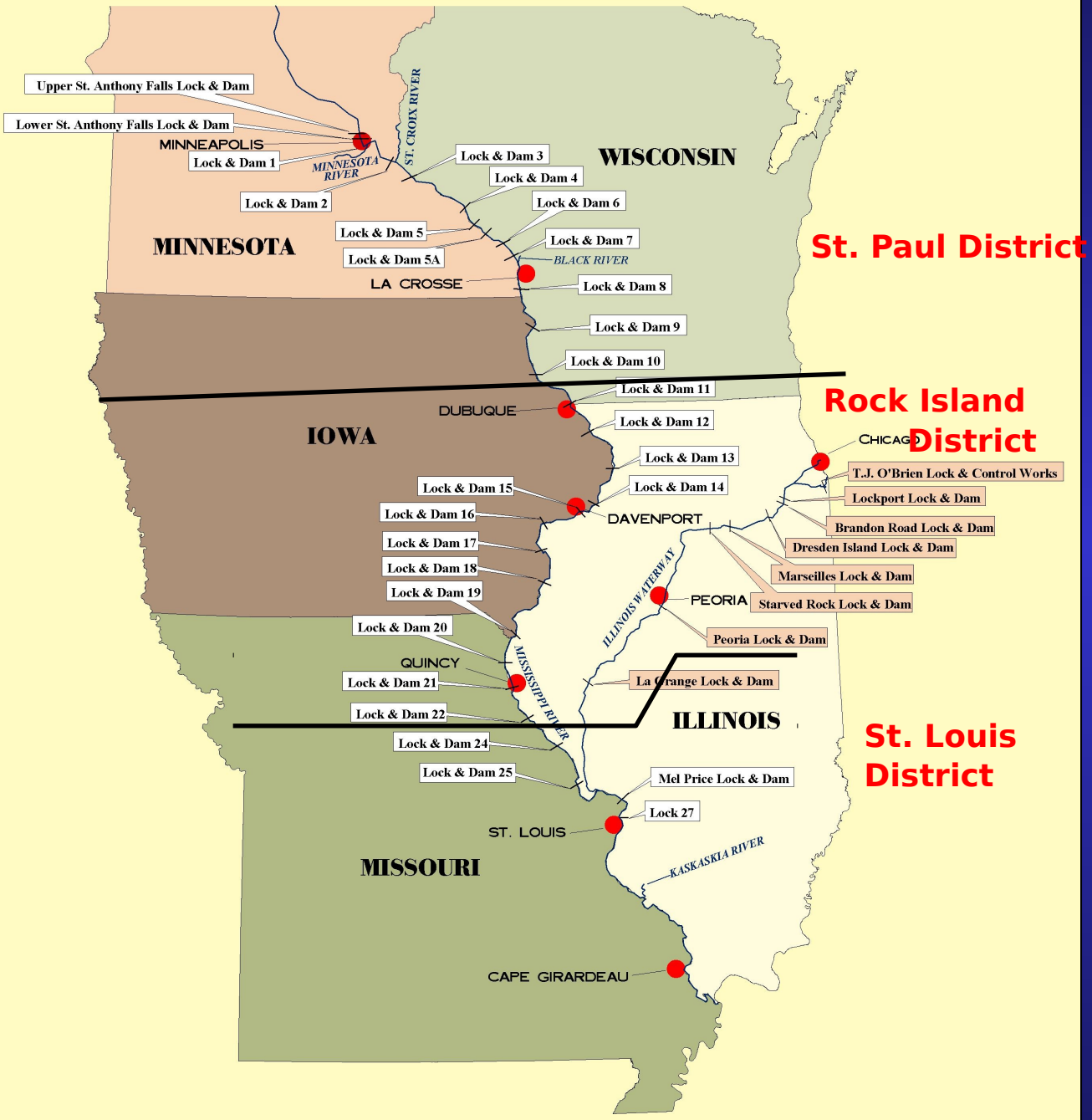
Upper Mississippi River & Illinois Waterway

- 3 Districts
  - St. Paul
  - Rock Island
  - St. Louis
- 37 navigation lock sites
- 1,200 miles of navigable channel




Upper St. Anthony Falls Lock & Dam
Lower St. Anthony Falls Lock & Dam
MINNEAPOLIS
Lock & Dam 1
MINNESOTA RIVER
Lock & Dam 2
ST. CROIX RIVER
Lock & Dam 3
Lock & Dam 4
Lock & Dam 6
Lock & Dam 5
Lock & Dam 5A
Lock & Dam 7
BLACK RIVER
LA CROSSE
Lock & Dam 8
Lock & Dam 9
Lock & Dam 10
Lock & Dam 11
DUBUQUE
Lock & Dam 12
Lock & Dam 13
Lock & Dam 14
Lock & Dam 15
Lock & Dam 16
DAVENPORT
Lock & Dam 17
Lock & Dam 18
Lock & Dam 19
Lock & Dam 20
QUINCY
Lock & Dam 21
Lock & Dam 22
Lock & Dam 24
Lock & Dam 25
ST. LOUIS
MINNESOTA
IOWA
WISCONSIN
ILLINOIS
MISSOURI
MISSISSIPPI RIVER
ILLINOIS WATERWAY
CHICAGO
T.J. O'Brien Lock & Control Works
Lockport Lock & Dam
Brandon Road Lock & Dam
Dresden Island Lock & Dam
Marseilles Lock & Dam
Starved Rock Lock & Dam
PEORIA
Peoria Lock & Dam
La Grange Lock & Dam
Mel Price Lock & Dam
Lock 27
KASKASKIA RIVER
CAPE GIRARDEAU
St. Paul District
Rock Island District
St. Louis District

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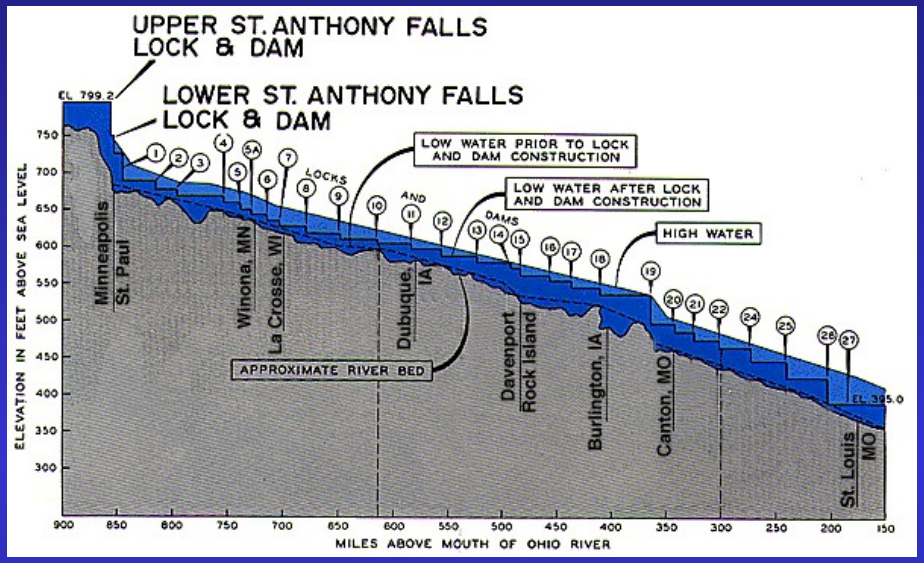
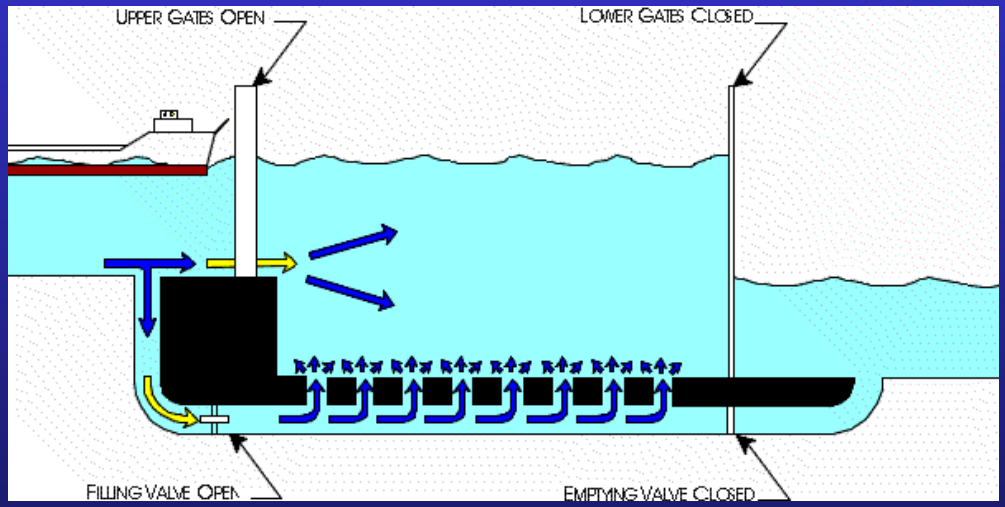
Upper Mississippi River & Illinois Waterway

- Region's more than 30 million residents rely on river water for public & industrial supplies, power plant cooling, wastewater assimilation & other uses.
- 29 locks & dams on the Mississippi & eight on the Illinois replaced rapids & falls with a stairway of water for commercial & recreational traffic.





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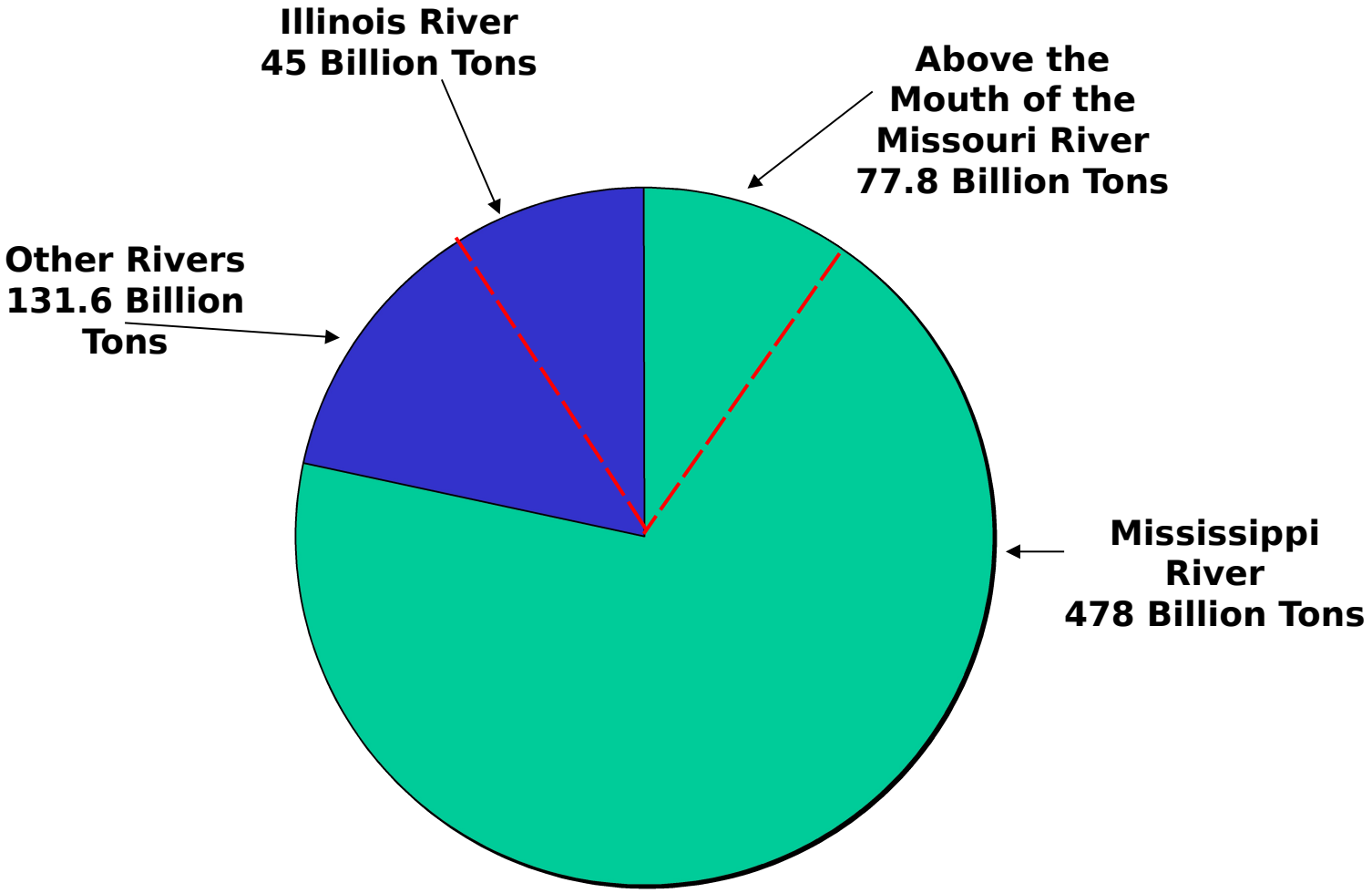
Upper Mississippi River & Illinois Waterway

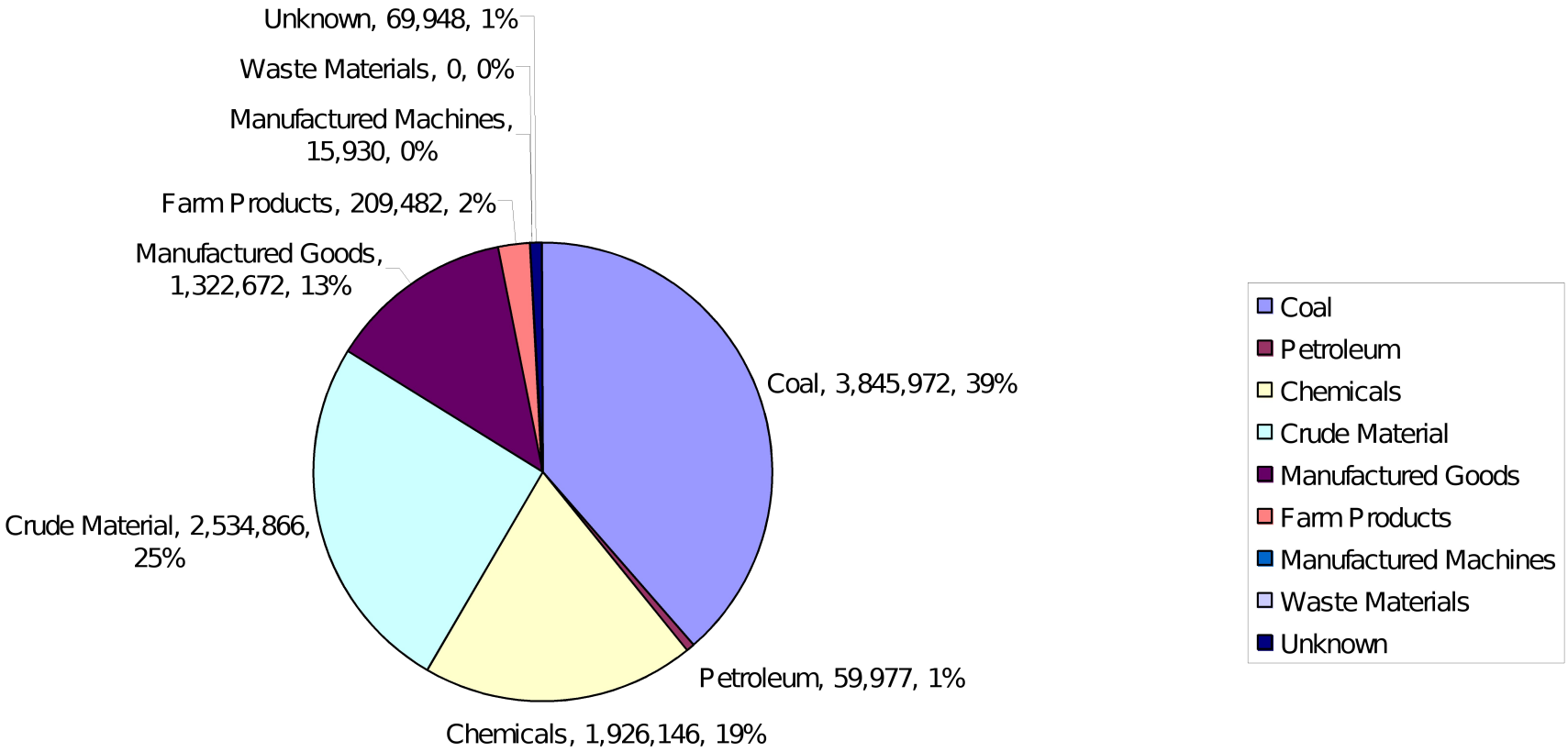
- Farm products make up more than half the total number of tons shipped on the river system.
- Also sand & gravel, coal & petrochemicals.
- 70% of the corn exported comes out of our area by barge.
- Nearly $725 million dollars in annual benefits to the public are received due to the reduced costs associated with river transportation over other forms of transportation, such as rail & truck.



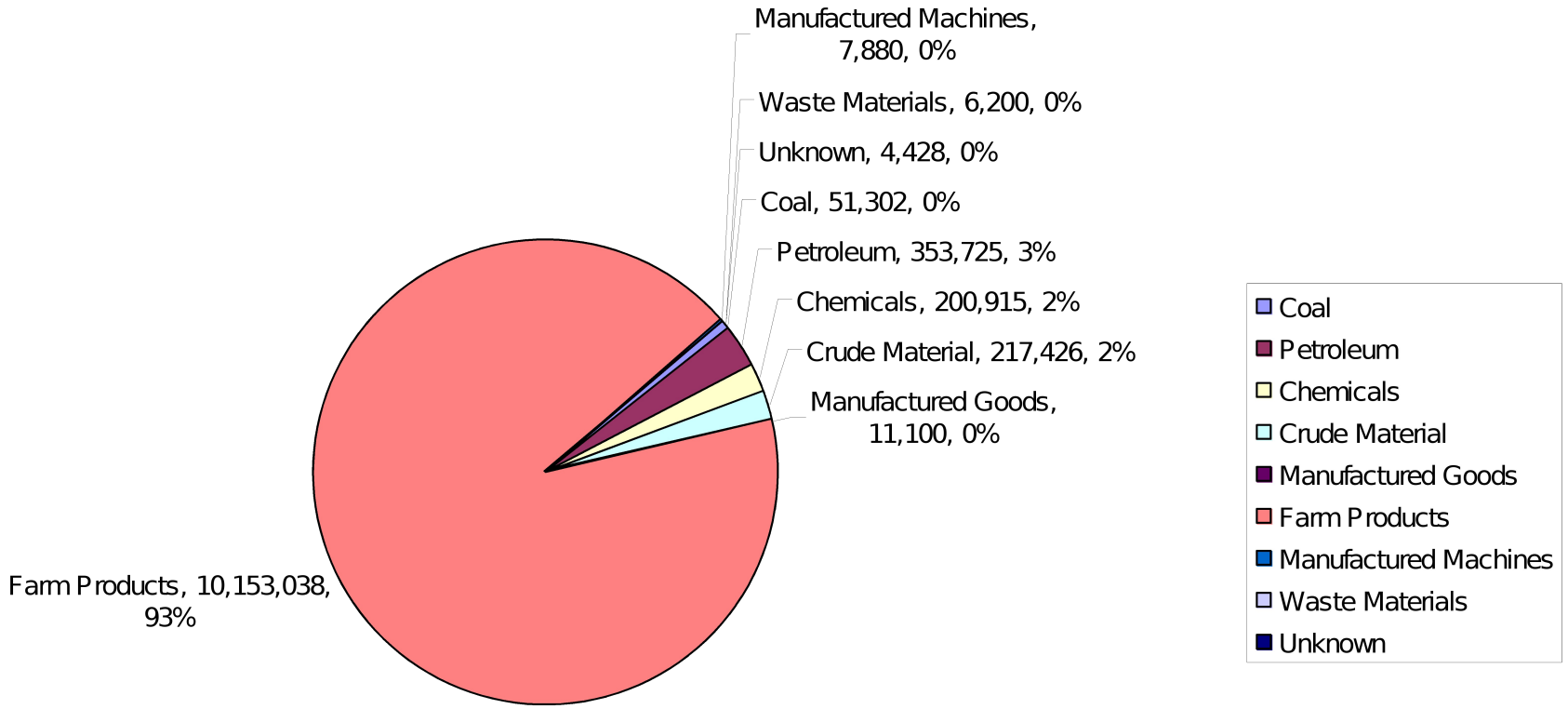
609.6 Billion Tons

Inland Navigation System

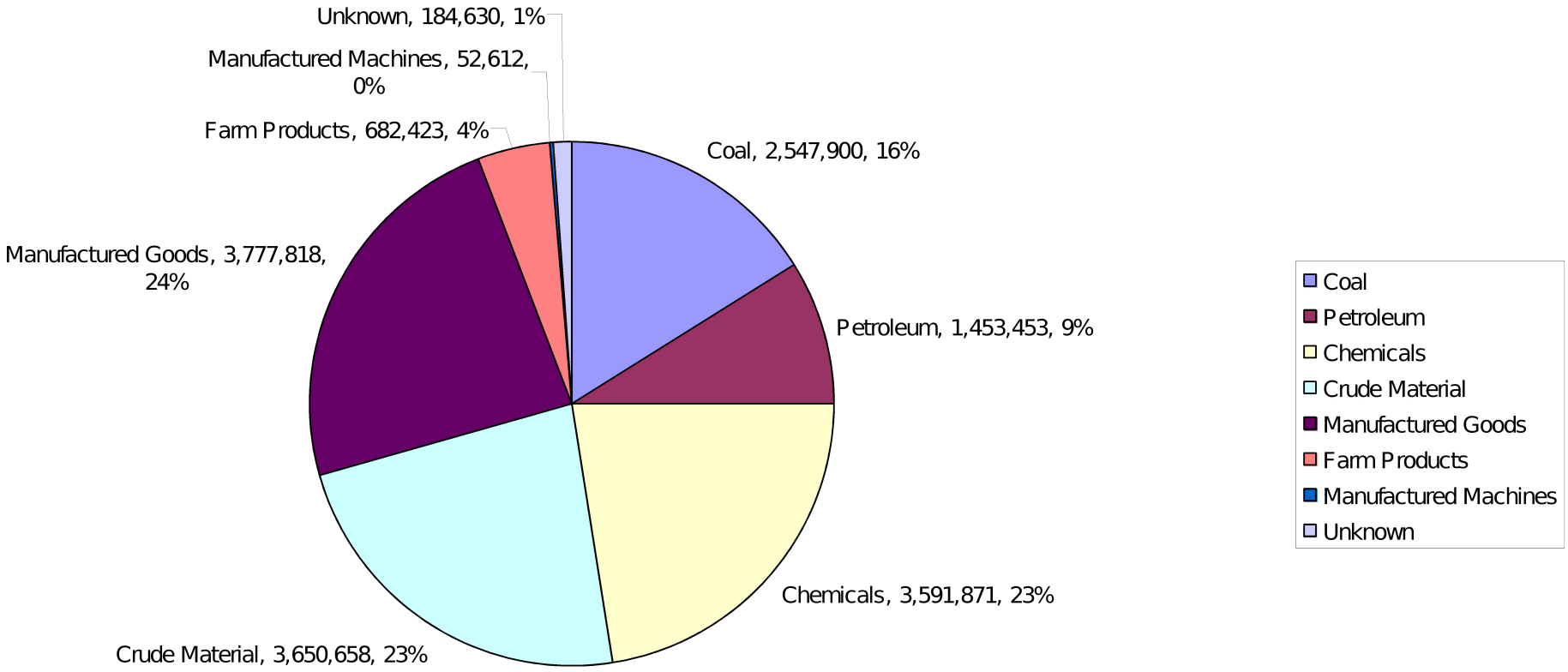
Lock 15 2005 Upbound Total Tonnages by Commodity
Total Tons: 9,984,993



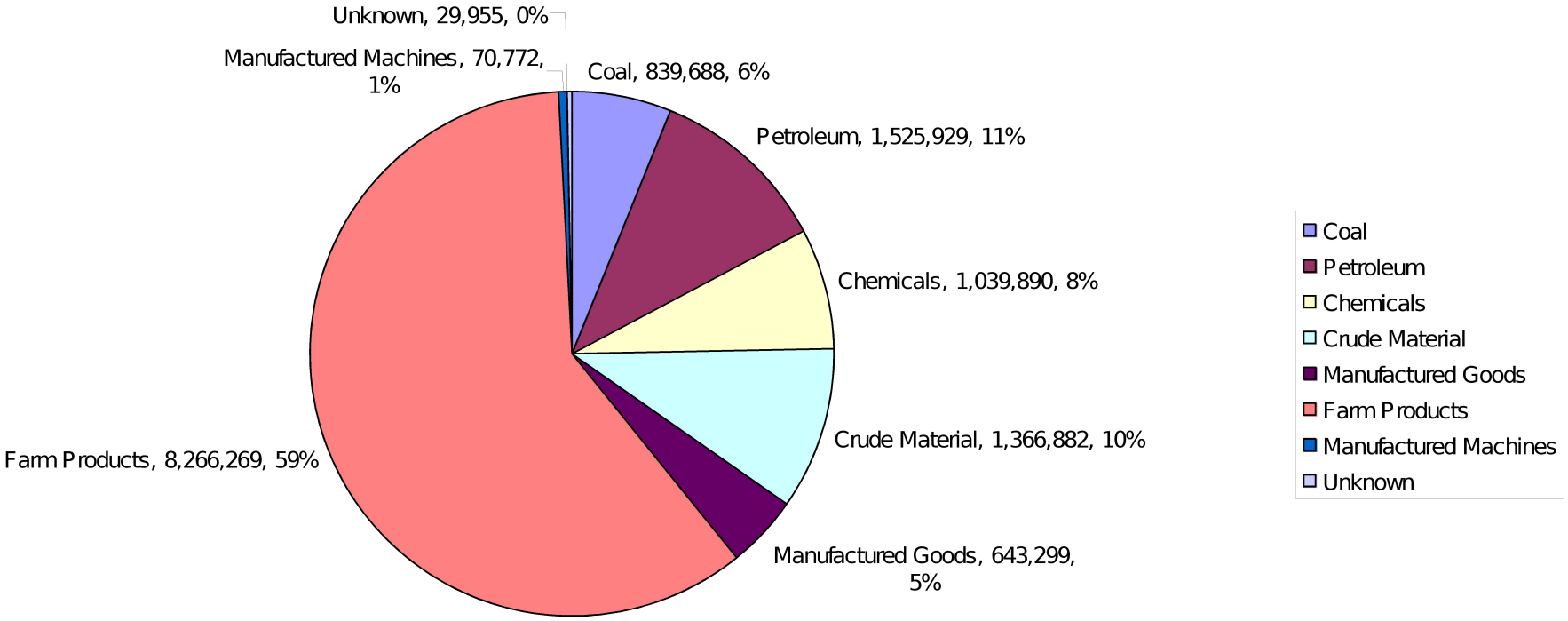
Lock 15 2005 Downbound Total Tonnages by Commodity
Total Tons: 11,006,014



Peoria Lock 2005 Total Upbound Tonnages by Commodity
Total Tons: 15,941,365



Peoria Lock 2005 Total Downbound Tonnages by Commodity
Total Tons: 13,782,684



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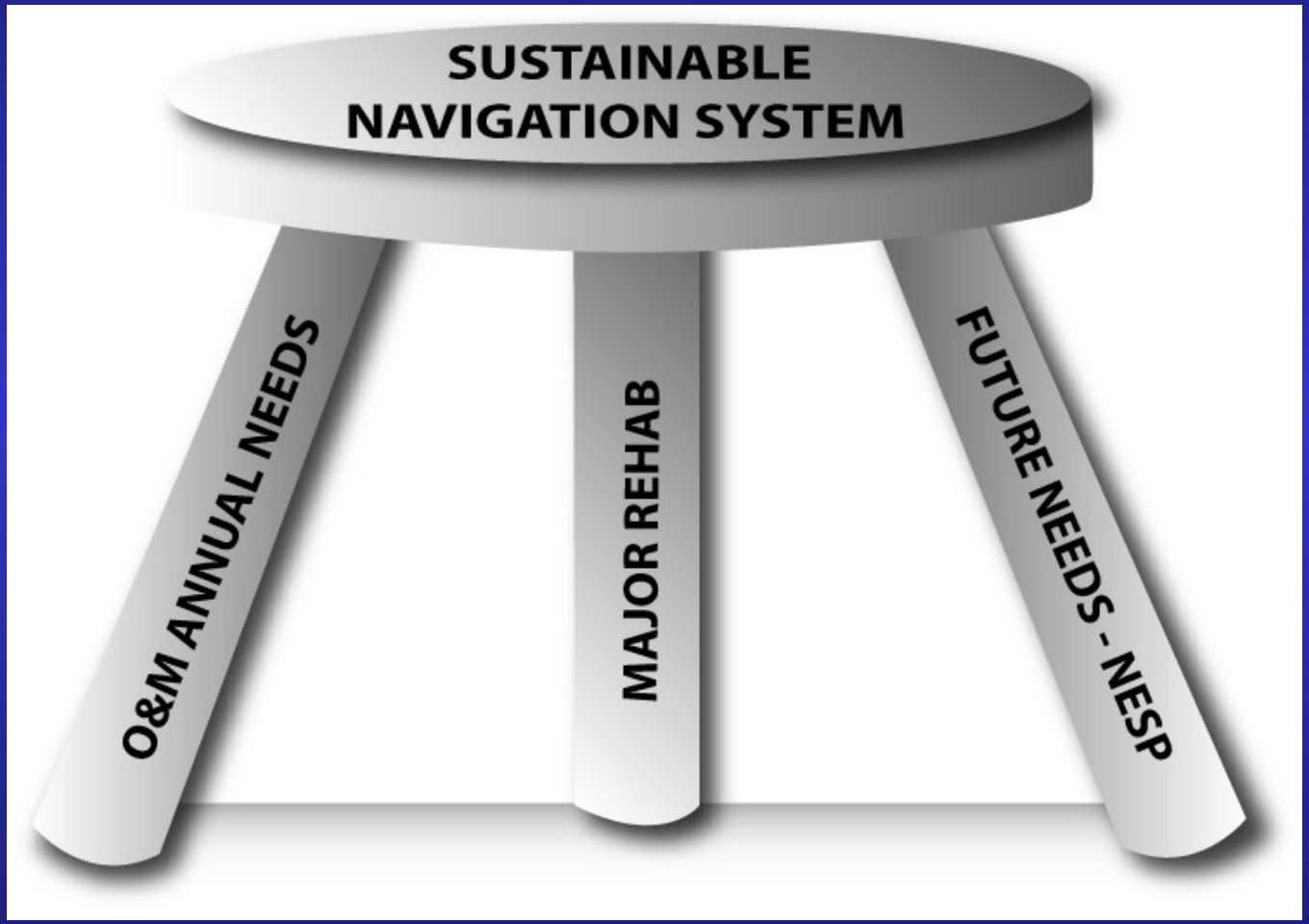

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- Locks Constructed in the 1930's
- Projected Life Span of 50 years

- Locks & Dam 15 Under Construction in 1930's
- (70 years ago)

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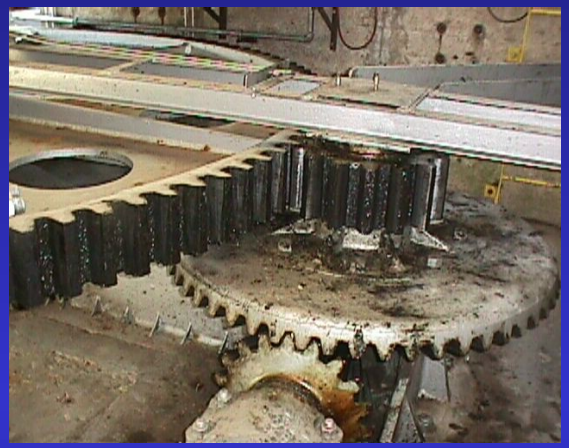
Aging Facilities

- Aging Factors
  - Freeze / Thaw
  - Ice
  - Corrosion
  - Fatigue / Use
  - Barge Impacts/ Abrasion
  - Concrete Deterioration



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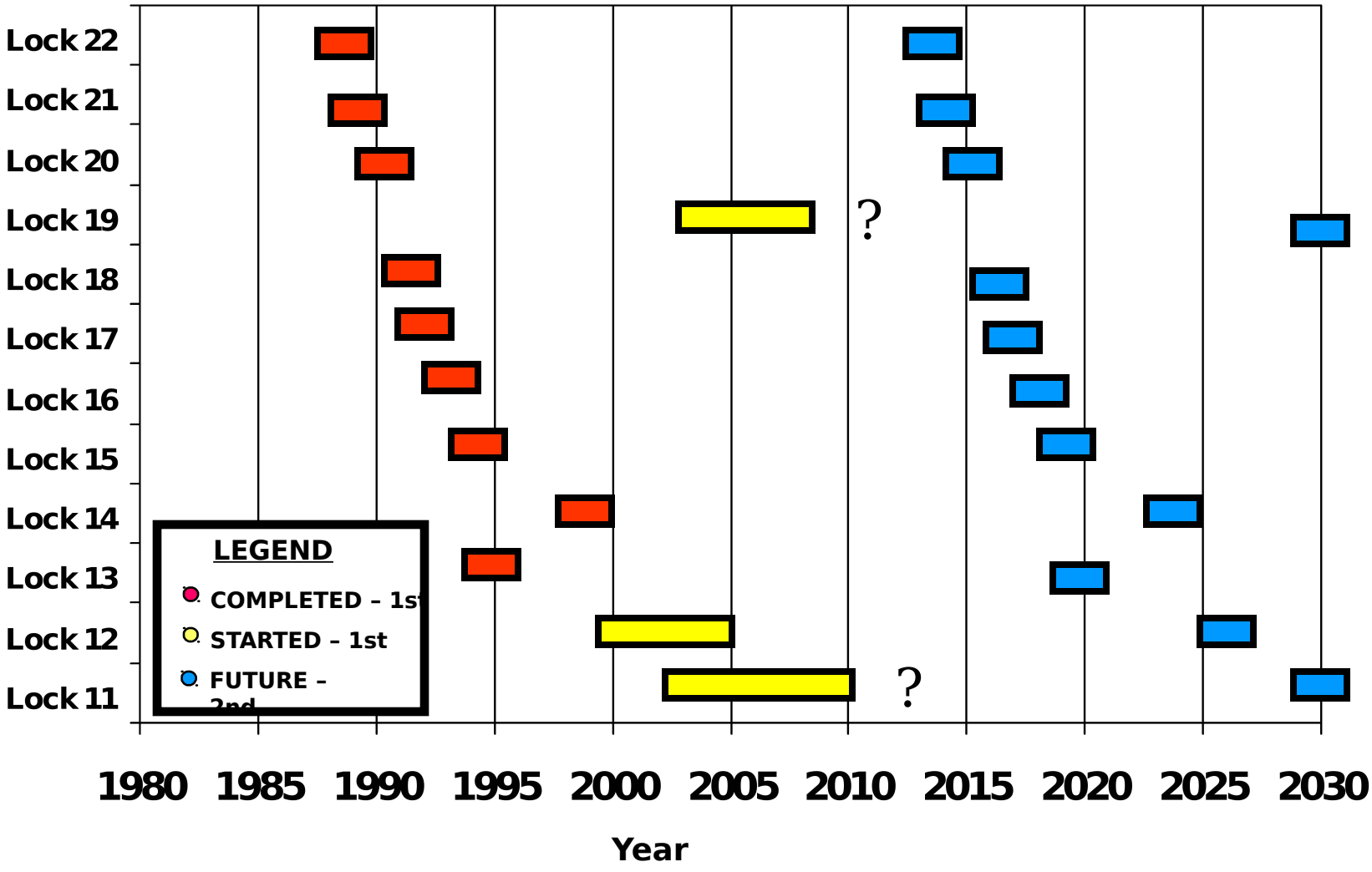
Operations & Maintenance → Major Rehabilitation

- Repairs to keep the locks operating reliably are increasing as they age

- For major structural repairs & replacements, the major rehabilitation program provides CG/TF funding

Schedule of Major Rehabilitations Upper Mississippi River in Rock Island District



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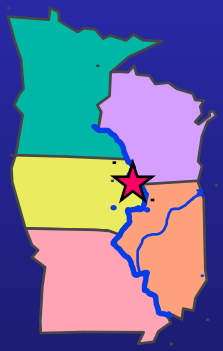
Lock & Dam 11
Dubuque, Iowa

- FY02 New Start
- Stage I (Scour) Completed, $3
- Stage II (Lock) Underway, $26
- Stage III – $12 M Awaiting Fun



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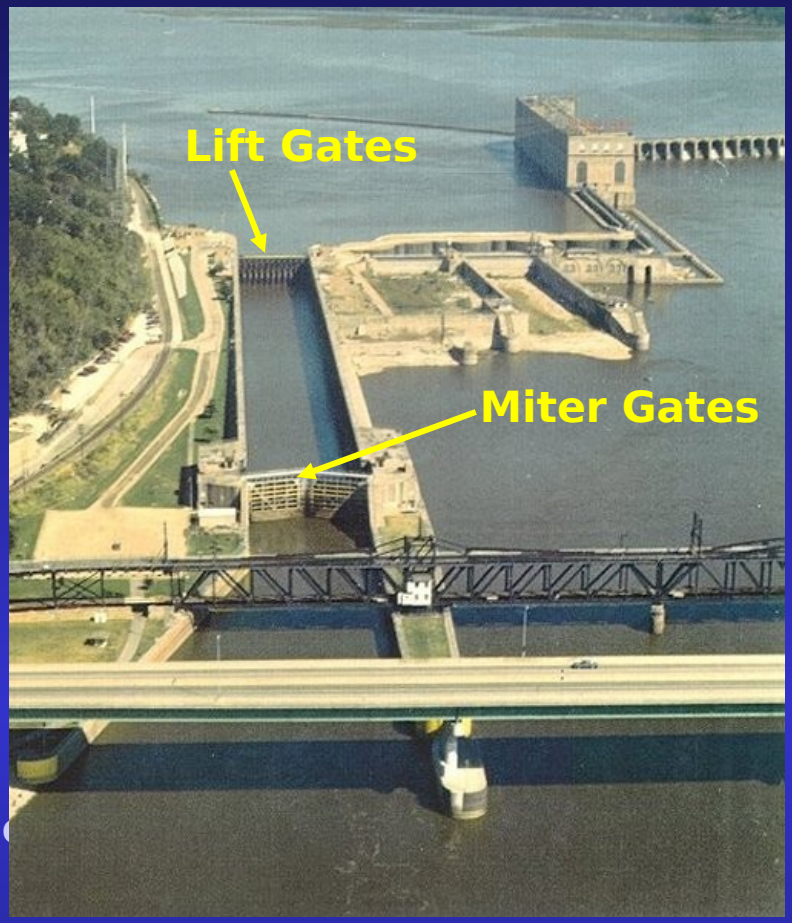
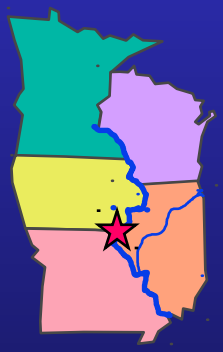
Lock 19 Keokuk, Iowa

- FY03 New Start
- Major Rehab - $21 M CG/TF
  - $51M w/ Lock Concrete
- Major Maint. - $1 M O&M
- Staging of Work
  - Stage I – Lift Gate Repairs
  - Stage II – Miter Gates, Machinery & Electrical Replacem





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Lock 19 – Downstream Miter Gates

1998 -- Major cracking discovered & gates repaired

2003

- **Additional major cracking found with gates determined not repairable**
- **Catastrophic failure of the gates was imminent**
- **Spare gate sections obtained from St. Louis District installed**

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Lock Chamber Concrete

- Lock 19 (Unfunded)

$30 Million Rehab

Deteriorated concrete @ lower pool

Vertical corner protection armor damaged & missing

Note: For safety reasons, loose armor was torched off during 1998 dewatering. Protruding armor presents safety hazards during lockages.

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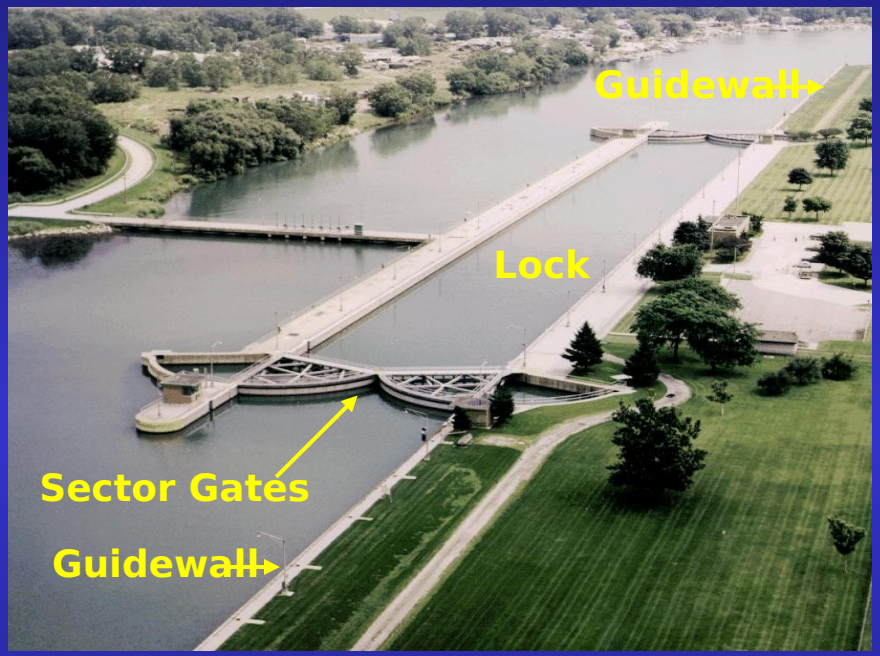
O'Brien Lock
Illinois Waterway @ Chicago, Illinois



- Major rehab - $17 M CG/TF
- Major Maint. - $9 M O&M
- Staging of work
  - Stage I – Lockwall cells
  - Stage II – Machinery & electrical replacements, sector gate repainting
  - Stage III – Guidewall repairs

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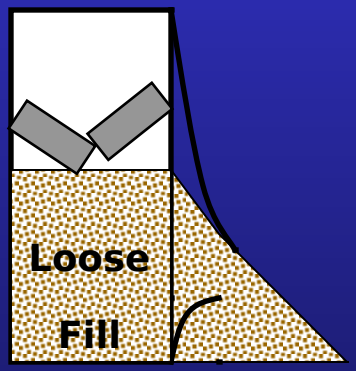
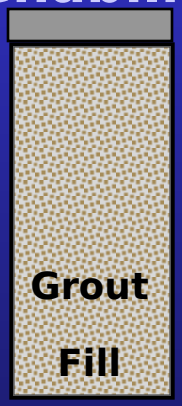
O'Brien Lockwall Cells

$17 Million Rehab

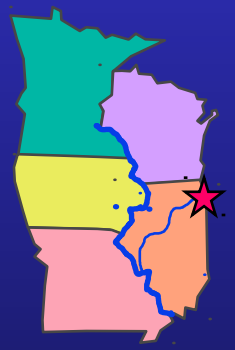
Existing



Rehabilitated



Corrosion of steel lockwall cells will result in rupture, loss of loose fill & closure of the lock



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Lockport Pool Major Rehab $ Needs

- Stage I – Approach dike, $25 M
- Stage II – Controlling works, $1.5 M
- Stage III – Powerhouse/dam, $1.5 M
- Stage IV – Concrete Guidewall, $8 M

Lockport Pool Approach Dike

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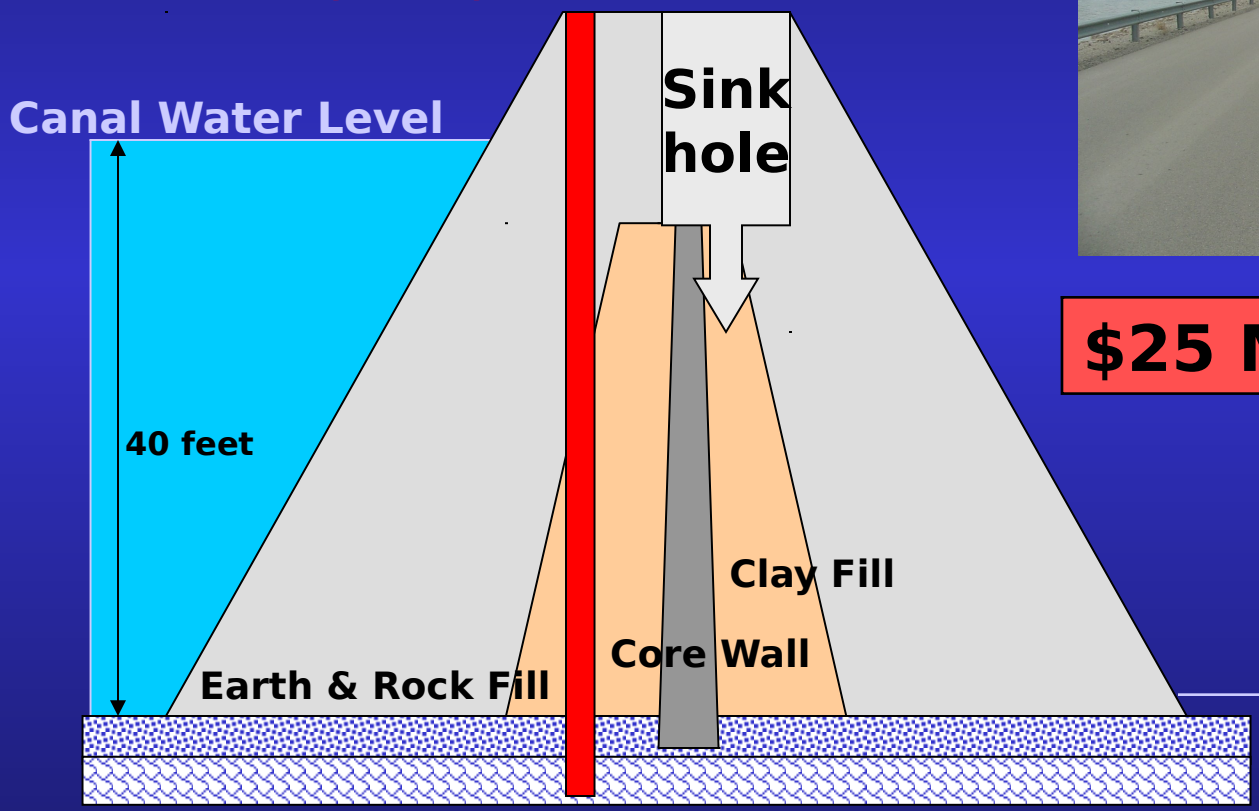
$25 Million Rehab



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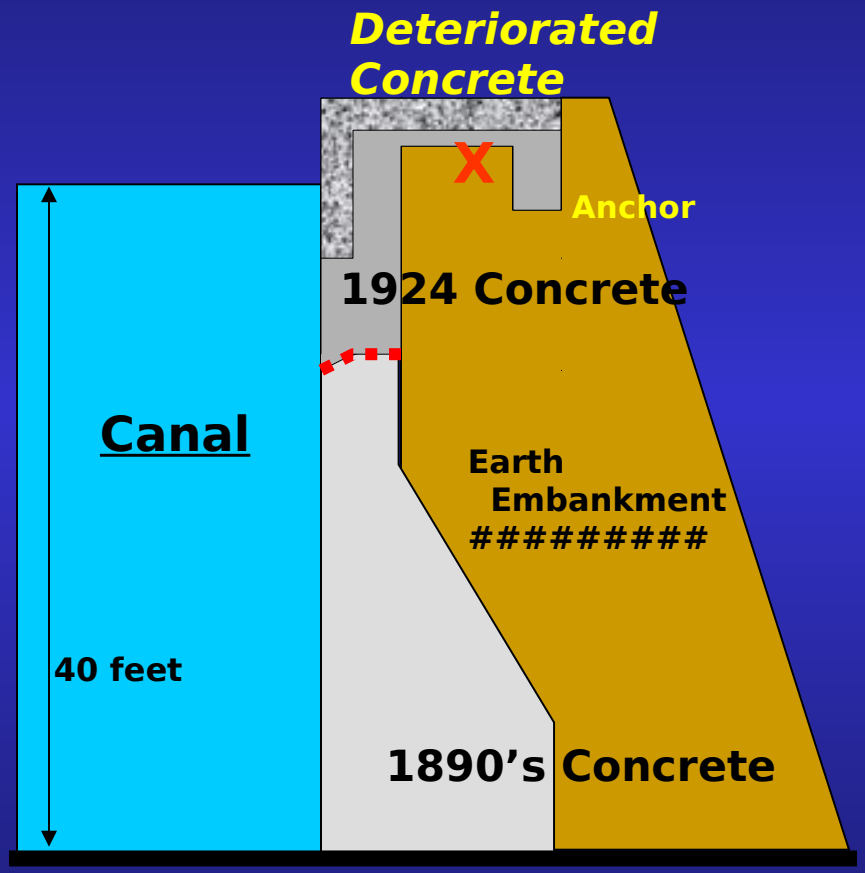
Lockport Pool Canal Wall

Left Bank



3 miles of canal wall surface concrete needs to be replaced to have continued wall stability

$20 Million Rehab

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Lock Dewatering

Bulkheads (Stoplogs)

Existing structures are not compliant with prevailing code requirements

Poiree Dam

Life Safety Issue

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Bulkheads & Slots Funding Needs

- **Bulkheads**
  - St. Paul (1 set) = $4,500,000
  - Rock Island (1 set) = $4,500,000 - IWW
    (Assumes 1 UMR Set Funded from Lock 11 Rehab)
  - St. Louis (1 set) = Existing
    Total = $9 Million

- **Bulkhead Slots**
  - St. Paul (10 sites) = $25,000,000
  - Rock Island (13 sites) = $23,000,000
  - St. Louis (1 site) = $2,000,000
    Total = $50 Million

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Major Rehab/Maint Summary

- Increasing risks to the nation's economy that is dependent upon reliable water borne transportation.
- O&M program annual funding is not keeping up with deterioration of the 70-year old lock & dam structures.
- CG funded major rehabilitation program needs are compounding due to inadequate funding levels.
- Ability to dewater the locks for repairs & rehabilitation has been jeopardized due to unsafe existing bulkheads & poiree dams.

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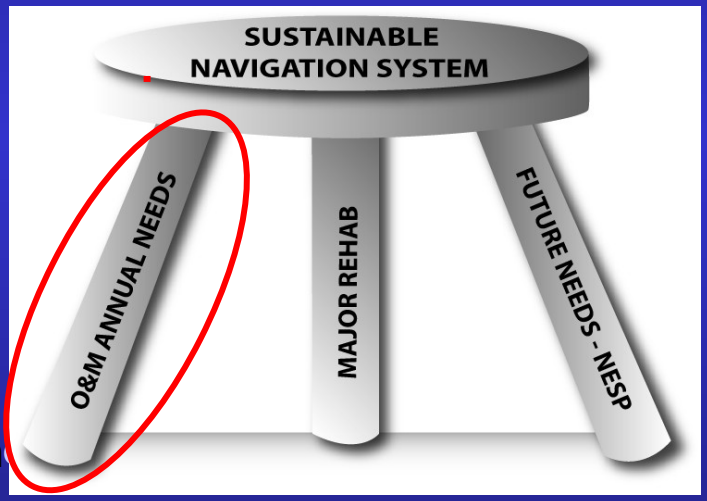
FY2007 Mississippi River Project President's Budget -- $37,208,000

- $10,036,000 needed to continue current operations
- Potential reductions in services scheduled for FY2007:
  - All backlog maintenance & routine maintenance will cease
  - Dredging
  - Some ongoing contracts cancelled
  - Lock operating hours
  - natural resource management
  - Recreation
  - Stream gaging
  - Personnel impacts
- Additional needs:
  - Major maintenance @ Lock 19
  - Major maintenance @ L/D 11
  - Gregory drainage ditch maintenan
  - Rehab L/D 15 hydropower turbine
  - Dredged material placement sites
  - Dredging
  - L/D 18 dam concrete design
  - Lock 21 miter gate replacement



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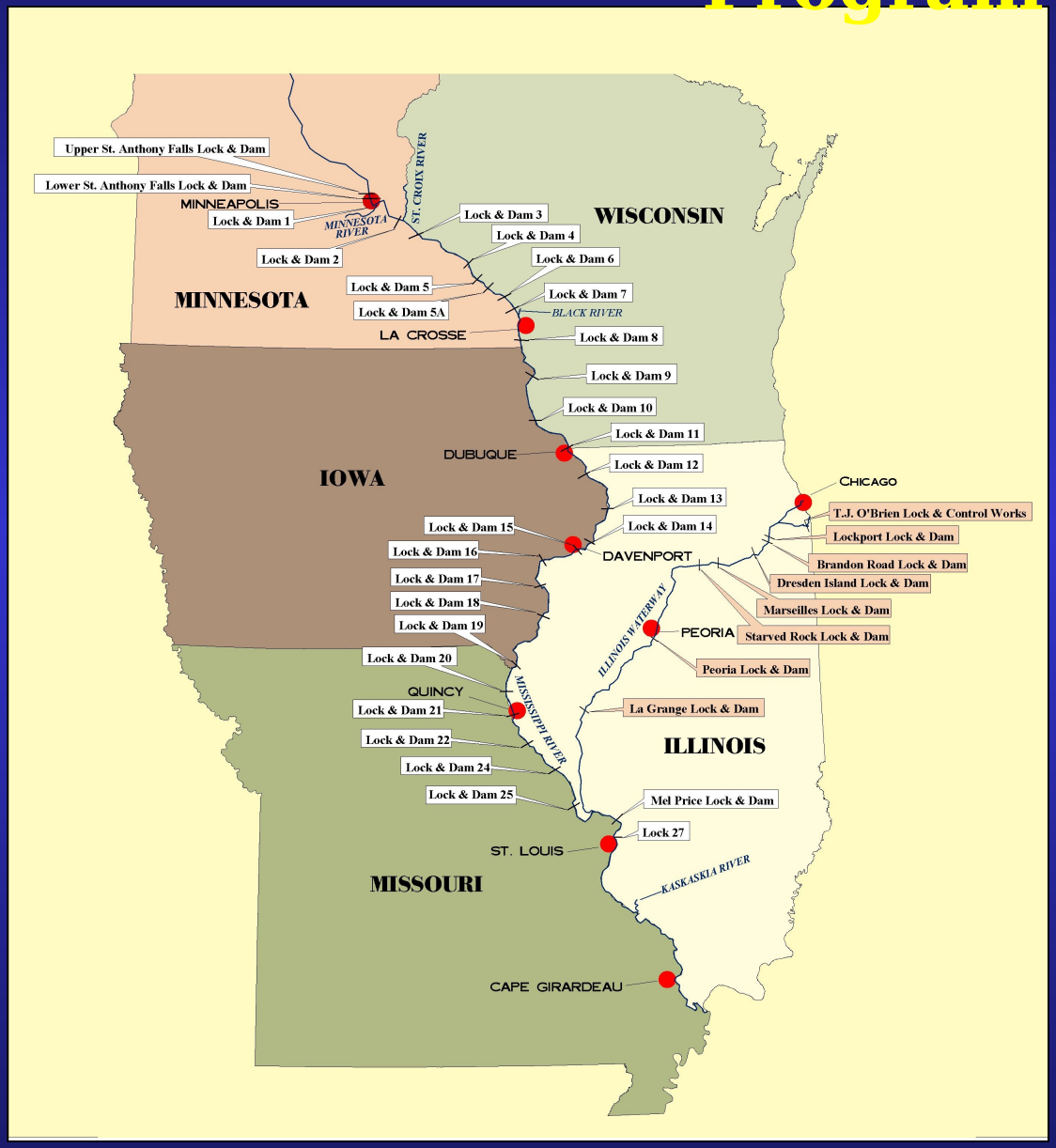
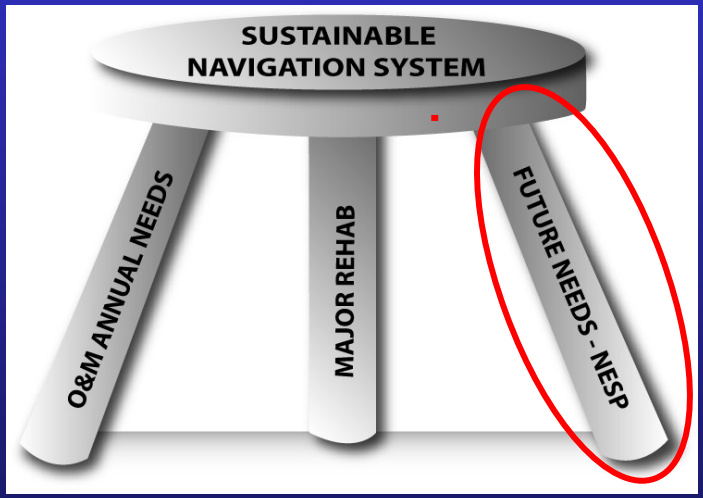
FY2007 Illinois Waterway Project President's Budget -- $27,453,00

- $8,172,000 needed to continue current operations
- Potential reductions in services scheduled for FY2007:
  - All backlog maintenance & routine maintenance will cease
  - Dredging
  - Some ongoing contracts cancelled
  - Lock operating hours
  - natural resource management
  - Recreation
  - Stream gaging
  - Personnel impacts
- Additional needs:
  - Restore project basic service level
  - Bulkheads
  - Marine design maneuver boat
  - Peoria Lock hydraulic repairs
  - LaGrange hydraulics
  - Dredged material placement sites
  - Dredging
  - Lockport tree removal – dam safety
  - Lockport concrete spillway
  - Lucas berg CDF EIS
  - Lockport, O'Brien & LaGrange rehab. plans & specs.

Navigation & Ecosystem Sustainability Program



- 37 Lock Sites
- 1,200 Miles of River
- Significant Ecosystem (2.5



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Navigation & Ecosystem Sustainability Program Status

- Final feasibility report - September 2004
- Chief of Engineer's report – December 2004
- Administration's position – January 2006
- Congressional action
  - House WRDA bill – passed
  - Senate WRDA bill – awaiting vote
- Pre-construction, engineering & design ($11.5 million FY 2005 & $10 million FY 2006)

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Program Elements

- Long term, dual purpose framework
- Authorization in increments
- Small-scale navigation improvements
- Large-scale navigation improvements (new locks)
- Developing & testing appointment scheduling
- Specifically identified ecosystem restoration projects
- Programmatic approach to ecosystem restoration using specifically identified measures
- Provisions for continued evaluation and adaptation

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First Increment Ecosystem Restoration

$1.58 Billion

- Fish passage @ Dams 4, 8, 22 & 26
- Changes in water control @ Dams 25 & 16
- Adaptive implementation of 225 small projects
  - Island building
  - Water level management
  - Backwater/side channel restoration
  - Wing dam/dike alterations
  - Island shoreline protection
- 35,000 acres of floodplain restoration
- Continued study & monitoring

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Ecosystem Restoration

Active Projects

- Backwater restoration – Upper Peoria Pool
- Side-channel restoration -- Scheniman Chute & Buffalo Island
- Wing dam/dike alteration -- Pool 2 & Herculaneum
- Changes in water control – Dam 25
- Shoreline protection – Multiple Sites
- Embankment lowering – L/D 8
- Island building – Pool 11
- Fish passage – L/D 22 & Mel Price
- Floodplain restoration -- Pierce County, WI; Root River, MN; Emiquon West, IL (USFWS)
- Water-level management – Pools 5, 9, & 18

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First Increment Navigation Projects

$2.03 Billion

- Mooring facilities @ Locks 12, 14, 18, 20, 22, 24 & LaGrange ($11M)
- Switchboats @ Locks 20 through 25 ($211M)
- 1200’ chambers at Locks 20 - 25, LaGrange & Peoria ($1.6B)
- Mitigation for incremental traffic effects ($180M)
- Continued study & evaluation ($22M)

Navigation Improvements

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FY05-FY06 Activities

- Locks 22 & 25:
  - Initial public meetings
  - Hydraulic & navigation modeling
  - Geotechnical subsurface borings
  - Lock structure design concepts
  - Initial environmental assessment
- LaGrange limited start - lock site planning
- FY06 continue design, revisit construction timeline, coordination with industry (nav. model & features)

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Points of Contact

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